

The Marin Countywide Plan

Environmental Quality Element Technical Report #3 Species Protection in Marin



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EXECUTIVE SUMMARY

The Environmental Quality Element Technical Report #4 Species Protection in Marin addresses the need to protect and preserve animal and plant diversity in Marin County. It includes information about the agencies responsible for species protection as well as the sources of information available regarding the location of special-status species in Marin County.

The report examines the species protection procedures currently in place in the County through existing policies in the Countywide Plan and the environmental review process. The report also examines the role of State, Federal, and County agencies and their responsibilities for species preservation as well as the various levels of legal protection status. In addition, the report provides background material necessary to support the policies in the Environmental Quality Element of the Marin Countywide Plan.

The United States Fish and Wildlife Service and the California Department of Fish and Game each have a role in protecting species and their habitats. The U.S. Fish and Wildlife Service focuses on ensuring the protection of species of concern to the entire United States such as marine mammals and migratory species of the Pacific Flyway. The California Department of Fish and Game takes the lead role for species protection on projects of local significance and is often solely responsible for species protection on such projects.

The California Department of Fish and Game has developed the Natural Diversity Database (NDDDB), an ongoing computerized inventory of the location and conditions of special-status species, and terrestrial and aquatic communities. Special-status species include: (1) those on or proposed for governmental lists of Endangered and threatened species; (2) species that are sensitive, fully protected, or of special concern; (3) species that are biologically rare, very restricted in distribution, declining throughout their range, or are peripheral to California; and (4) species closely associated with ecosystems that are declining in California at an alarming rate (e.g. wetlands, native grasslands, and riparian ecosystems). The California Department of Fish and Game also inventories Significant Natural Areas (SNAs). SNAs are sensitive habitats with a high degree of species diversity. Typically, these areas contain many special-status species. The locations of SNAs in Marin County are included in the Natural Diversity Database.

I. BACKGROUND AND PURPOSE

A. PURPOSE

The purpose of this report is to identify the need to protect plants, animals, and habitats in Marin County. The report describes existing and proposed Countywide Plan policies for species protection and the species protection requirements in the environmental review process. This report also identifies Federal, State, and local authorities for protecting plants, animals, and habitats.

B. BACKGROUND

Marin County is well known for its natural beauty and diversity of natural resources. The lands in Marin provide habitat for a rich variety of plants and animals. Because of the change in Marin's landscape caused by human activities, several species of plants and animals and some natural communities in Marin County are becoming threatened with extinction. In addition, many more common species are becoming increasingly rare.

The Federal and State governments have long recognized the need to protect and preserve the species most threatened with extinction. Both Federal and State governments have enacted species protection laws to preserve species threatened with extinction. The result is that both the United States government and the State of California have developed lists of threatened and endangered species which have legal protection status. This legal protection status requires local planning agencies to prescribe mitigation measures to ensure that development and other human activities do not adversely impact these species or the habitat upon which they depend for survival.

At the time this document was written, the environmental review process in Marin County included a review of potential impacts to special-status species and Significant Natural Areas. The policies in the Countywide Plan needed to reflect this requirement. The Initial Study process, part of the environmental review process and a requirement of CEQA, includes a determination of whether or not the project or its related activities result in:

- Changes in the number or diversity of plant and animal species or alteration or deterioration of their habitats;
- Introduction of new plant or animal species into an area, or a barrier to normal dispersal or migration of any plant or animal species;

- Reduction in the number of any rare or endangered plant or animal species;
- Reduction in acreage of any agricultural crop or other agricultural activity; or,
- Increase in the danger of fire hazard in areas with flammable grass, brush, or trees.

The Countywide Plan policies need to reflect the CEQA requirements with regard to species and habitat preservation.

II. SETTING

The most effective method for preserving plant and animal diversity is preserving habitat diversity. In general, species conservation laws focus on individual species, while very little attention is given to protecting the habitat base upon which plant and animal species depend. Consideration must be given on the overall wildlife impact of specific development proposals, beyond impact to the immediate area.

Development can lead to patches of habitats, in addition to destroying whole habitats. If these habitats are too small in area, they may not be sufficient to support the organisms that would ordinarily live in the area. When patches of viable habitat are isolated from each other, free flow of wildlife is obstructed and the gene flow necessary to produce healthy variability in species is impeded. Thus consideration of wildlife corridors (i.e. habitat continuity for wildlife movement and dispersal) are addressed in the environmental review process as part of the environmental checklist required under CEQA.

The edge where two or more habitat types meet is an area of ecological importance, since these edges are primary determinants of regional species diversity. Wildlife biologists have long recognized that different habitat types support different sets of species and that edges between habitats can be particularly rich in wildlife. Indeed, edges between habitats often serve as distinct habitats themselves, supporting unique groups of edge-dependent species.

Eleven major biotic communities exist in Marin, each providing a different habitat for different plant and animal species:

Mixed Evergreen Forest. The mixed evergreen forest is characterized by broadleafed evergreen hardwoods and conifers. This plant community can be found on the hilly areas such as Mount Tamalpais and Inverness Ridge and China Camp State Park.

Oak Woodlands. Oak woodlands consist predominantly of deciduous oak trees and native perennial grasses. This plant community can be found mainly in the dry interior of Marin County. A prime example of oak woodland can be found on the south-facing slopes of Mount Burdell in Novato.

The oak woodland community is in jeopardy, due to a decline in reproductivity, and the community is currently undergoing close scientific scrutiny. Failure of new growth is especially critical in valley oak and blue oak woodland. The main factor that appears to be responsible is impact of grazing practices. Cattle and sheep eat both acorns and foliage, compact soil, change vegetation from native perennial grasses to annual grasses, and change rodent populations due to dominance of annual grasses. Other factors that contribute to degradation of the oak woodland community are (1) ground water withdrawal, (2) fire suppression, (3) intensive land clearing, and (4) greater predator control.

Bishop Pine Forest. The Bishop pine forest is a closed-cone pine community. These pine communities are established after a fire which opens their closed cones and distributes the seeds. The Bishop pine forest can be found at Tomales Bay State Park and Point Reyes National Seashore.

Coast Redwood Forest. The coast redwood forest is characterized by tall redwood trees, reaching as high as 250 feet. The coast redwood occurs in areas of consistent summer fog as well as in north-facing canyons on Hicks Mountain and Big Rock Ridge. Almost all of the virgin redwood forests have been logged and are now second growth. The exception is stands of virgin redwoods in Muir Woods National Monument.

Grassland. The grasslands in Marin have been altered by the introduction of non-native species from Europe. The native California grasslands consist mostly of perennial bunch grasses and numerous annuals. Marin County has two types of grasslands: coastal prairie and valley.

Coastal prairie exists in areas of summer fog and contains more native species than valley grassland, which exists in the inland drier areas. A distinctive variety of coastal prairie occurs on serpentine soils scattered throughout the County, such as Ring Mountain, Mount Tamalpais, and the northern San Rafael ridges. Serpentine grasslands support a number of endemic wildflowers and bunch grasses.

Coastal Beach Dune Vegetation. These plant communities occur along the coast just above the tidal zone. Low-lying perennial herbs and grasses lie close to the beach. Further inland are several perennial lupines, mock heather and the small-leaved form of coyote brush.

Northern Coastal Scrub. Northern coastal scrub is a community characteristic of the low lying hills near the ocean. The dominant species is coyote brush. Also common are poison oak, California hazelnut, blue blossom, coffeeberry, and thimbleberry. Northern coastal scrub is found on coastal hillsides from Tomales Bay to the Golden Gate Bridge. There are two associations of northern coastal scrub in Marin County: coyote brush-sword fern, which is found predominantly on the lower slopes of the northern end of Bolinas Ridge; and, coastal sage-coyote brush, which is found on the south facing slopes at the southern end of the Point Reyes Peninsula and east of the San Andreas Fault from Bolinas Lagoon south to the Golden Gate Bridge.

Chaparral. Chaparral is a dense vegetation found on poor, dry soils and/or rocky slopes in the inland portions of the county. There are four different associations: chamise, manzanita, mixed, and serpentine. Chamise is characteristic of hot, south, or west facing slopes where chamise is the dominant species. Manzanita occurs in slightly cooler areas, such as the east facing slopes on the south side of Mount Tamalpais. Mixed chaparral occurs in slightly moister conditions than other chaparral associations. Serpentine association is restricted to areas with serpentine soils.

Coastal Salt Marsh. Coastal salt marshes occur within the intertidal zone of shallow bays, estuaries, and lagoons; thus they are found around the margin of San Francisco Bay and in sheltered places along the outer coast of Marin. Seasonal wetlands that pond water in the winter and diked salt marsh provide additional valuable wetland habitat for wildlife.

The three dominant plant species of the salt marsh are cordgrass (*spartina foliosa*) at lowest elevations, pickleweed (*salicornia virginica*) at middle elevations, and salt grass (*distichlis spicata*) at upper margins of the marsh. Other plant species in this habitat are alkali heath, marsh rosemary, jaumea, plantain, arrow weed, gumweed, and dock. The best examples of coastal salt marshes in Marin are at China Camp State Park and at the southern end of Tomales Bay. At Petaluma Point, at the head of Tomales Bay, and at the cemetery on Bugeia Lane in Novato a brackish marsh gradient occurs between the coastal salt marsh and the freshwater marsh. Common species in this area are bulrush and cattail. The Silveira Ranch and upper McInnis Park have seasonal wetlands with mixed herbaceous cover. It should be noted that some seasonal wetlands are not vegetated but still provide foraging, resting, and refuge habitat that is critical for migratory and resident species. Spinnaker Lagoon and the Canalways in San Rafael are diked former salt marsh and open bay with remnants of salt marsh vegetation.

The vast majority (85%) of coastal salt marshes around the San Francisco Bay have been destroyed by filling and diking. The sensitive environment of the coastal salt marsh or wetland is threatened by new development. Most coastal salt marshes are located within the Bayfront Conservation Zone. These wetland areas are a haven for wildlife, and are a breeding ground for many species. Several endangered and threatened species depend on wetland areas for their continued survival, including the salt marsh harvest mouse, the clapper rail, the black rail, the salt marsh song sparrow, soft-birds beak, Point Reyes birds beak, Marin knotweed, and the California beaked rush. Wetland areas are often referred to as the "kidneys" of the bay, since the health of San Francisco Bay, San Pablo Bay, and Richardson Bay is inexorably linked to the health of these wetland areas.

Riparian. Riparian forest is the dense growth found along creeks and streams throughout the County and is vital for stabilizing creek channels. Riparian growth is made possible by the presence of continuous water flow in what is normally a dry or upland habitat. The dominant species are red alder, white alder, arroyo willow, yellow willow, big-leaf maple, box elder, and California bay. A significant amount of destruction has been done to riparian growth due to clearing for development and channel construction for flood control. The riparian forest has suffered greatly from development, stream channelization, and cattle grazing. Very little remains in Marin County.

The best examples of riparian growth can be found where there is an undisturbed stream such as portions of Lagunitas Creek, or at the edge of a pond or freshwater stream, such as Muddy Hollow at Point Reyes.

The riparian habitat is a particularly important habitat because it is often used as a corridor for animal movement and dispersal between other habitats. The riparian habitat often has the elements of an edge habitat, which is a transition zone between two habitats. Edge habitats are important because they are the preferred feeding, nesting, and hunting grounds of many species. The availability of brush in close proximity to tree cover provides an excellent feeding ground. Most riparian habitats are located within Streamside Conservation Areas.

Freshwater Marsh and Pond. A freshwater marsh occurs when there is slow moving water across a generally flat, broad area. California bulrush and cattail predominate in the shallow water. Other plants found in this habitat may include rushes, sedges, curly dock, sheep sorrel, water parsley, and bur reed. The best example of a freshwater marsh in Marin is the Olema marsh. A variation of the freshwater marsh habitat is the coastal swale. These occur generally where there is an abundance of fresh water on a coastal prairie or on coastal beach-dune community. Point Reyes National Seashore has a good example of a coastal swale community. Natural freshwater ponds and lakes are rare in Marin as most have been filled, dredged, or dammed by human activities. They are important for many forms of wildlife and are often bordered by a freshwater marsh.

III. COUNTY SPECIES PROTECTION POLICIES

A. ENVIRONMENTAL QUALITY ELEMENT OF THE COUNTYWIDE PLAN

The Environmental Quality Element of the Marin Countywide Plan includes policies for the protection and preservation of plant and animal wildlife in addition to specific policies aimed at protecting the most biologically diverse areas of the County, such as the Bayfront Conservation Zones and Streamside Conservation Areas.

1. General Policies

The Environmental Quality Element contains policies which seek to preserve the natural habitat through the development review process whenever possible. For example, policy EQ-3.6 states:

A diversity and abundance of wildlife and marine life shall be maintained. Vegetation and animal habitats shall be preserved whenever possible.

In addition, there are policies which preserve native species through preservation of the native environment and discouraging aggressive, exotic species such as policy EQ-3.14, which states:

The planting of aggressive plants such as broom and pampas grass should be discouraged in any development over which the County has review authority.

2. Bayfront Conservation Zone

The Environmental Quality Element of the Marin Countywide Plan includes policies and implementation measures to ensure the continued viability of Marin's bayfront areas. Specifically, the Element includes nine policies aimed at habitat protection and restoration. For example, Policy EQ-2.42 reads:

The County shall preserve and enhance the diversity of wildlife and aquatic habitats found in the Marin County bayfront lands, including tidal marshes, seasonal marshes, lagoons, natural wetlands, and low-lying grasslands overlying historic marshlands.

The zoning designation on parcels within these bayfront areas has been amended to include specific development review standards in accordance with the Environmental Quality Element policies, such as Policy EQ-2.50 which reads:

The County shall review all proposed development within the Bayfront Conservation Zone in accordance with the planned district review procedure in order to ensure maximum possible habitat protection. An assessment of existing environmental conditions (biologic, geologic, hazard, and aesthetic) shall be required prior to submittal of development plans.

3. Streamside Conservation Areas

The Environmental Quality Element also includes several policies aimed at protection of all perennial and intermittent streams, which are defined as natural watercourses shown as solid blue or dashed blue lines on the most recent appropriate USGS quad sheet. The limits of these Streamside Conservation Areas (SCAs) are established in Policy EQ-2.3, which reads:

A Streamside Conservation Area should be designated along all such streams, to consist of the watercourse itself and surrounding banks on both sides up to the high water mark and a strip of land extending laterally outward from the top of both banks, to a width of 100 feet on each side in the Coastal Recreation and Inland Rural Corridors and to a width of 50 feet on each side in the City-Centered Corridor. Where large tracts of land in the City-Centered Corridor are proposed for development, the 100-foot buffer should be applied, where consistent with legal requirements, and other planning and environmental goals. In the Coastal Recreation and Inland Rural Corridors, the zone should be extended if necessary to include an area 50 feet landward from the edge of riparian vegetation.

Policies for SCAs include general protection of this irreplaceable resource, preservation of existing and native vegetation, and fish and wildlife protection and enhancement.

B. LOCAL COASTAL PROGRAM

Marin's Local Coastal Program (LCP) is divided into two units. LCP Unit #1, (adopted in 1979) which includes those coastal lands south of Olema, is mostly in Federal land. LCP Unit #2 (adopted in 1980), between Olema and Sonoma County, contains Point Reyes National Seashore and privately owned agricultural land along Tomales Bay. Together LCP 1 and 2 amend the Countywide Plan policies for these areas.

The Coastal Program includes policies for the preservation and enhancement of coastal habitats, including streamside habitats, lagoon habitats, dune and sandy beach habitats, and Monarch butterfly habitats as well as various environmentally sensitive habitats within each of the coastal communities.

IV. REGULATORY AGENCIES

Regulatory agencies have a legal responsibility to carry out the State and Federal laws enacted to protect species and their habitats. The State and Federal agencies which have a role in species preservation are the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

A. LEVELS OF PROTECTION STATUS

The following terms correspond to the different levels of legal protection status and describe the extent of a species decline.

Endangered species are those species which are in immediate possibility of extinction.

Threatened species are those species which are not in immediate possibility of extinction, but could be if conditions needed for survival worsen.

Rare is a term that is synonymous with threatened. The term "rare" is used in reference to plants on the California Department of Fish and Game lists.

Candidate species are those species for which there may or may not be sufficient biological information to support a proposal to list as endangered or threatened.

The U.S. Fish and Wildlife Service and the California Department of Fish and Game have delineated the level of protection needed for a particular species. These levels of protection constitute the legal status of the species.

B. THE U.S. FISH AND WILDLIFE SERVICE

The U.S. Fish and Wildlife Service is responsible for ensuring that Federal actions do not have an adverse impact on Federally listed threatened, endangered and candidate species (those for which there is sufficient biological information to warrant a listing as threatened or endangered) and critical habitat (the geographic area in which are found those physical or biological features essential to the conservation of the species). The U.S. Fish and Wildlife Service receives this authority from the Endangered Species Act, 16 U.S.C. 1531 et. seq. (Section 7). The U.S. Fish and Wildlife Service is authorized to protect species of concern to the entire United States, such as marine mammals and migratory species. The agency has jurisdiction over all projects where Federally listed species are involved or when Federal permitting or funding is necessary.

U.S. Fish and Wildlife Service Levels of Protection:

Endangered - Federally listed

Threatened - Federally listed

Candidate 1 - Candidate species for Federal listing where the U.S. Fish and Wildlife Service has sufficient biological information to support a proposal for listing as endangered or threatened.

Candidate 2 - Candidate species for Federal listing for which existing information may warrant listing, but for which substantial biological information to support a proposal is lacking.

The United States Fish and Wildlife Service recognizes the need to protect all migratory species along the Pacific Flyway, as well as Federally listed endangered, threatened, and candidate species. Annually, the Service flies over the San Pablo and San Francisco Bays to take a census of migratory species. The agency has accumulated considerable data on migratory species and their habitat in Marin County.

C. THE CALIFORNIA DEPARTMENT OF FISH AND GAME

The California Department of Fish and Game has the authority to require protection of special-status species and to ensure their continued survival under the Endangered Species Act, California Administrative Code, Title 14, Section 670.5. The California Department of Fish and Game takes the lead role for species protection on projects of local significance and often is solely responsible for species protection on such projects. The California Department of Fish and Game and the U.S. Fish and Wildlife Service work together in an effort to avoid a duplication of efforts.

California Department of Fish and Game Levels of Protection:

Endangered - California listed

Threatened - California listed

Rare - California listed

Species of Special Concern - California Department of Fish and Game

Fully Protected - A California Department of Fish and Game "fully protected" species, as described in California Department of Fish and Game Code Sections 4700, 5050, and 5515.

Candidate - for listing as endangered, threatened, or rare.

1. Special-Status Species

Since the California Department of Fish and Game recognizes the need to protect species other than those officially recognized as endangered, threatened, or proposed for listing as threatened or endangered, the Department developed the term "special-status" species. This term refers to all plants and animals of concern, regardless of their legal protection status. Special-status species fall under one or more of the following categories:

1. Officially listed or proposed for listing under the State of California and/or the Federal Endangered Species Acts;
2. State of California or Federal candidate species for possible listing;
3. A California Department of Fish and Game Species of Special Concern;
4. Species that may be considered endangered or rare under Section 15380(d) of CEQA guidelines;
5. A Bureau of Land Management, U.S. Fish and Wildlife Service or U.S. Forest Service Sensitive Species;
6. Species listed in the California Native Plants Society's Inventory of Rare and Endangered Vascular Plants of California;
7. Species that are biologically rare, very restricted in distribution, or declining throughout their range but not currently threatened with extirpation;
8. Population(s) of species in California that may be peripheral to the major portion of a species' range but are threatened with extirpation in Marin or California;
9. Species closely associated with a habitat that is declining in California at an alarming rate (e.g. wetlands, riparian, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats, vernal pools, etc.).

2. Natural Diversity Database

In an effort to assist local governments in determining the impact of proposed development on special-status species and the habitats upon which they depend, the California Department of Fish and Game, in cooperation with The Nature Conservancy, established the California Natural Diversity Database (NDDDB). The NDDDB is an inventory of plants and animals and natural communities of special concern in California. The California Department of Fish and Game staff continually expands, updates, and analyzes the database in order to keep the inventory current and to identify research and conservation needs for a particular species or area.

The NDDDB consists of: (a) a list of all species inventoried by the database; and (b) all of the sites in Marin County where one or more of these species has been positively identified. The NDDDB is kept on file with the County Planning Department and is referenced during the environmental review process. This database is subject to change by the Department of Fish and Game as it is periodically updated. Plants and animals qualify for listing in the database if they are a special-status species.

The NDDDB has some shortfalls. The inventory consists mostly of species sightings on protected lands, such as State, Federal, and County parks. Furthermore, due to budgetary constraints at the Department of Fish and Game, many verified sitings are not entered into the database in a timely manner. The State Department of Fish and Game is aware of these shortcomings and is working with individual counties to make the database as useful as possible. For example, here in Marin County, the Planning Department is compiling information on the location of Monarch butterfly habitats in order to include these important habitats in the NDDDB. The Department of Fish and Game has agreed to send to the County Planning Department photocopies of verified sitings that have not been entered into the database as well as copies of the various recovery programs adopted for threatened and endangered species within the County's jurisdiction.

3. Significant Natural Areas

In addition to developing the Natural Diversity Database (NDDDB), the California Department of Fish and Game has inventoried significant natural areas (SNAs) pursuant to Assembly Bill 1039 passed in 1981. SNAs are areas that are known to contain plants and animals listed in the NDDDB. These areas have been inventoried in order to raise awareness among developers, planners, environmental groups, and others about their presence. The inventory was intended to initiate a dialogue among public and private organizations about the identification and long-term protection of the most important elements of California's natural diversity.

The term "element", as used in this report, refers to all species or natural communities (collectively known as "elements" of natural diversity) inventoried by the California Department of Fish and Game NDDB. A Significant Natural Area is recognized as such if it meets one of the following four criteria:

- a. *Extremely rare type* - Location of extremely rare elements. Elements are considered extremely rare in California if they are either:
 - a. Known from less than 6 viable sites;
 - b. Represented by less than 1,000 individuals; or,
 - c. Restricted to less than 2,000 acres of habitat.
- b. *Ensemble type* - Locations where three or more elements occur together. An element is inventoried if it is either:
 - a. Known from less than 100 viable sites;
 - b. Represented by less than 10,000 individuals; or,
 - c. Restricted to less than 50,000 acres of habitat.
- c. *Best Example type* - Locations of the best examples known for natural communities or Natural Diversity Database inventoried species. These locations, in general, should be in relatively pristine and undisturbed condition. In some cases, however, no pristine examples may remain for a particular species or community. For these cases, the best remaining examples, despite their disturbed nature, are included.
- d. *High-diversity type* - Centers of high species diversity. A more detailed description of this type will be available from the Department of Fish and Game at a later date.

Many of these SNAs are on protected lands, such as the Point Reyes National Seashore, while others are on private land with potential for development. These SNAs exist throughout the County in areas such as the coastal zone, bayfront areas, and open space preserves such as Ring Mountain. Each site entry in the Significant Natural Areas list describes one site and the special status species that have been observed on the site and their legal status (i.e. endangered, threatened, candidate). The approximate limits of each SNA are based on the known distribution of elements on each site; however, detailed site boundaries require on-site evaluation by qualified biologists. Additional information on each site is on file at the Marin County Planning Department and is also available from the California Department of Fish and Game.

D. ENVIRONMENTAL REVIEW AT THE MARIN COUNTY PLANNING DEPARTMENT

For the jurisdiction of the County of Marin (which includes all unincorporated areas), the County Planning Department is responsible for carrying out the species and habitat protection provisions of the California Environmental Quality Act (CEQA) and the National Environmental Protection Act (NEPA) in the environmental review process.

Species protection policies are implemented during environmental review. The environmental review process is required on any project, as defined by CEQA, section 21065. A project includes (a) activities directly undertaken by any public agency; (b) activities undertaken by a person which are supported in whole or in part through contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies; and (c) activities involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies. In the preliminary stage of the environmental review process, an initial study is prepared by the project planner pursuant to CEQA section 15063(k). The project planner determines the impact on species and habitat diversity based on review of (a) Natural Diversity Database maps which include locations of Significant Natural Areas; (b) CEQA areas of critical environmental sensitivity; (c) consultation with other agencies such as the California Department of Fish and Game or the U.S. Fish and Wildlife Service; and (d) other planning department resources. If the evidence in the initial study shows that a significant impact could occur, then a biological study or an Environmental Impact Report (EIR) is required for the project.

**APPENDIX 1. ENDANGERED, THREATENED, AND CANDIDATE
SPECIES IN MARIN**

Tables 1 and 2 list verified sitings in Marin County of the animal and plant species with the highest levels of protection status (endangered, threatened and candidate species for which there is sufficient biological information to support a proposal to list as endangered or threatened). A more comprehensive listing of all species of concern known to exist in Marin County is on file with the Marin County Planning Department. The tables also list the general location(s) of each species as indicated by U.S. Geographical Survey (USGS) quadrangle map. These species may occur in other areas of the County, but only confirmed sightings have been listed. The locations of some species are not mapped because the information is either too sensitive or not available. This list is current as of May, 1989 and is subject to change by the Department of Fish and Game as it is periodically updated.

Table 1. Endangered, Threatened, and Candidate Animals in Marin

Status	Species State/Fed	USGS Quad(s)
1. California Black Rail <i>Laterallus jamaicensis coturniculus</i>	CT/FC2	Novato, Inverness, Petaluma Point, Tomales, San Rafael
2. California Clapper Rail <i>Rallus longirostris obsoletus</i>	CE/FE	Bolinas, Novato, Inverness, Petaluma Point, Petaluma River, San Rafael, San Quentin
3. California Brown Pelican <i>Pelecanus occidentalis californicus</i>	CE	Not mapped
4. Black Shouldered Kite <i>Elanus caeruleus</i>	CF	Novato
5. Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i>	CE/FE	Petaluma Point, San Quentin, San Rafael
6. American Peregrine Falcon <i>Falco peregrinus anatum</i>	CE	Not mapped
7. Mission Blue Butterfly <i>Icaricia icarioides missionensis</i>	CE	S.F. North
8. California Freshwater Shrimp <i>Syncaris pacifica</i>	CE/FE	Inverness, Tomales
9. S.F. Forktail Damselfly <i>Ischnura gemina</i>	FC1	Drakes Bay, Tomales
10. Salt Marsh Song Sparrow <i>Melospiza melodia samuelensis</i>	CC	Not mapped
11. Least Tern <i>Sterna antillarum browni</i>	CE/FE	Not mapped

State Status:

CE - California Endangered
CT - California Threatened
CR - California Rare
CF - California Fully Protected
CC - California Candidate

Federal Status:

FE - Federal Endangered
FT - Federal Threatened
FC1 - Federal Candidate 1
FC2 - Federal Candidate 2

Table 2. Endangered, Threatened, Rare and Candidate Plants in Marin

Species	Status State/Fed	Status USGS Quad(s)
1. North Coast Semaphore Grass <i>Pleuropogon hooverianus</i>	CR/FC2	San Geronimo, San Rafael
2. Soft Birds Beak <i>Cordylanthis mollis ssp. mollis</i>	CR/FC1	Petaluma River, San Rafael
3. Tiburon Mariposa Lily <i>Calochortus tiburonensis</i>	CT/FC1	San Quentin
4. Tiburon Indian Paintbrush <i>Castilleja neglecta</i>	CT/FC1	San Quentin
5. Tiburon Jewelflower <i>Streptanthus niger</i>	CE/FC1	San Quentin
6. Santa Cruz Tar Plant <i>Holocarpha macradenia</i>	CE/FC1	San Rafael
7. Marin Bent Grass <i>Agrostis blasdalei var. marinensis</i>	CR/FC2	Tomales
8. Yellow Larkspur <i>Delphinium luteum</i>	CR/FC1	Tomales
9. Mason's Ceanothus <i>Ceanothis masonii</i>	CR/FC2	Bolinas, San Rafael
10. Baker's Larkspur <i>Delphinium bakeri</i>	CR	Bolinas, Point Reyes NE, Tomales
11. Point Reyes Blennosperma <i>Blennosperma nanum var. robustum</i>	CR/FC2	Drakes Bay, Tomales
12. Sonoma Spineflower <i>Chorizanthe valida</i>	CE/FC1	Drakes Bay
13. Western Lily <i>Lilium occidentale</i>	CE/FC2	Drakes Bay
14. Point Reyes Meadowfoam <i>Limnanthes douglasii var. sulphurea</i>	CE/FC2	Drakes Bay, Inverness
15. Beach Layia <i>Layia carnosa</i>	CE	Drakes Bay, Tomales
16. Point Reyes Indian Paintbrush <i>Castilleja leschkeana (presumed extinct)</i>	FC1	Drakes Bay, Tomales
17. Marin Dwarf Flax <i>Hesperolinon congestum</i>	FC1	Bolinas, San Quentin

State Status:

CE - California Endangered
CT - California Threatened
CR - California Rare
CF - California Fully Protected
CC - California Candidate

Federal Status:

FE - Federal Endangered
FT - Federal Threatened
FC1 - Federal Candidate 1
FC2 - Federal Candidate 2

APPENDIX 2. REFERENCES

Persons Consulted

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Karen Steinke, California Department of Fish and Game
John Ellison, California Department of Fish and Game

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